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Preliminary study of coach verbal behaviour according to game actions

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ABSTRACT

Guzmán JF, Calpe-Gómez V. Preliminary study of coach verbal behaviour according to game actions. *J. Hum. Sport Exerc.* Vol. 7, No. 2, pp. 376-382, 2012. The aim of this study was to analyse the interaction between game actions in high-level handball and verbal behaviour performed by the coach. For this purpose, a match of the 1st National Division of male Spanish handball was analysed. The type of behaviour and the content of the message reported by the coach were recorded using a modified version of Coaching Behaviour Assessment System (CBAS) and Coach Analysis and Intervention System (CAIS). About game actions, they were grouped into positive and negative. Statistically significant differences were obtained in both the coach's type of behaviour (Chi-square = 63.978, df = 13, Sig <0.001) and message content (Chi-square = 19.401, df = 6, Sig = 0.004) according the game action performed previously (positive or negative). After positive actions coach performed more positive feedback and encouragement, and after negative actions coach performed more negative feedback and queries, and content of communication was more related with results of technical-tactical action. Results offer some clues about specific coach behaviours that may be game action dependent. This knowledge may be useful to implement interventions to improve coaches' behaviour. However, more in depth studies with bigger samples are necessary. **Key words:** COACHING BEHAVIOUR, FEEDBACK, COMMUNICATION PATTERNS, NOTATIONAL ANALYSIS

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INTRODUCTION

Rothwell (1994) indicated that the element that contributes the most to the player's knowledge on the implementation of a skill is intrinsic feedback, which was defined as the information obtained by the person thanks to his body own receptors such as muscle spindles and joint receptors. However, Franks (1996, 2004) noted that although intrinsic feedback is vital when running a skill, the coach's responsibility is to provide the best possible external feedback that allows the athlete to accurately compare what he has done with what was intended to do, and that this information is one of the most important variables that influence learning and consequently skill performance. Newell (1981) added that the kind of information offered is a determinant of success because specific information about performed action produces greater benefits than unspecific feedback.

Regarding the above, it is important to the coach to know the amount of feedback to be provided and the time to do so. In this regard, Lawrence and Kingston (2008) indicated that the athlete needs time to process both the extrinsic and intrinsic feedback of the performed action previously to produce an action plan for the subsequent one. These authors mention the importance of the guidance hypothesis (Salmoni et al., 1984), whereby if the athlete receives feedback after each action he may become dependent on it, thus diminishing the benefits of intrinsic sensory feedback required to detection and correction of errors (Bjork, 1988; Schmidt, 1991). This is a danger, because in a game situation, which is the concern of this study, the contribution of feedback can be severely limited or even disappear by multiple factors (noise, distance, removal of coach, aphonia, etc..) and can decrease performance because of dependence to feedback developed by the athlete to effectively implement the required skill (Lawrence & Kingston, 2008). Based on the foregoing, it may be stressed the importance of not saturating the athlete with too much information in order that it may internalize their successes and failures and develop their intrinsic mechanisms of detection and correction, which does not mean that the coach must not give to athlete the information required at all times.

More and Franks (2004) noted that effective coaching skills as planning and organizing learning experiences and the submission of feedback and instructions are a key to improve athletes performance. These same authors added that quantitative analysis of coach verbal behaviour would help to know if information about variables of performance was efficiently provided. One way to implement this quantitative analysis is the notational analysis, which according to Hughes (2005) is an objective way to record the key elements of performance and quantify them with validity and reliability. Returning to the importance of the information and linking with the notational analysis, More and Franks (2004) presented systematic observation as an analytical process that can provide valid and reliable information as key elements of effective communication. This type of observation allows the study of the information by using notational analysis tools that can accurately describe the indication in the context of physical education and sport. These instruments, in turn, benefit from computer technology, which allows the synthesis and display of data, helping coach to provide an adequate feedback of performance.

Several studies have examined coaches verbal behaviour through systematic observation in various sports: football (Ford et al., 2010; Potrac et al., 2002; Smith & Cushion, 2006), basketball (Bloom et al., 1999; Lacy & Goldston, 1990), ice hockey (Trudel et al., 1996), volleyball (Zetou et al., 2011), but it has not been found any relevant work referred to sport of handball and more importantly, no comprehensive studies analyzing the influence of game actions in the coach's verbal behaviour. Thus, the objective of this study was to make a preliminary approach on the influence of the game actions in high-level handball in the communicational pattern provided by the coach to his players through a game situation descriptive study. It should be

mentioned that although in this preliminary study it has been analysed a single match, the purpose of this project is to establish a baseline in this field by analyzing a larger number of matches and studying the influence of other variables as the phase of the game or the score. The knowledge of these patterns of communication may help coaches to improve the quality of verbal information provided during the game.

MATERIAL AND METHODS

Participants

In this preliminary study it was analysed a single match corresponding to the 1st National Division of male Spanish handball which pitted teams from La Florida University and Amibal Toledo Sports Club. It was analysed the verbal behaviour of the La Florida University coach.

Instruments

To analyse the communication pattern of the coach it was used a modified version of the Coaching Behaviour Assessment System (CBAS) (Smith, 1977) and Coach Analysis and Intervention System (CAIS) (Cushion et al., 2012). It was analysed the "message content", which included 6 items: execution of technical-tactical action, result of technical-tactical action, intensity, behaviour not specified, team organization, referee decision, and offense or attempt to offend); and the "type of behaviour", composed by: positive feedback, negative feedback, orderly instruction, encouragement, disagreement, lament, consultation, call, suggested instruction, timeout request, assaulting or insulting, and alert).

For analysis of the game actions 19 of them were identified, 9 being positive: scoring, provoking penalty, provoking exclusion of a rival player, intercepting a ball, blocking a shot, forcing a bad pass, causing passive game, performing a tactical fault that avoid a clear chance of goal, provoking fault in attack by a rival player; and 10 negative: loosing ball by bad pass, bad reception, double bounce, steps, non converted shot, passive game and offensive fault, suffering a goal, committing penalty without necessity, and suffering a player exclusion. The analysis of the game actions was reduced to both positive and negative actions in order to simplify the results of the study. Both ratings were made using notational analysis, and their timing for the subsequent statistical treatment was made possible by the use of a timeline with an accuracy of seconds coincident with the development of the match.

Procedure

The record of the coach's verbal behaviour was carried out using a tape recorder wrapped in a pouch that was placed on the coach waist to bother him as little as possible. For complete information regarding the communication pattern of the coach, a video camera located directly opposite the bench area recorded their movements throughout the match, although the study of nonverbal behaviour was not the object of this study. For the recording of information regarding the game, a second camera located next to the first recorded all game actions that occurred in the match. For managing each camera it was needed a different person.

Data analysis

Statistical analysis was performed with SPSS (Statistical Package for the Social Sciences), version 19.0 (SPSS Inc., Chicago, Illinois, United States). We calculated the absolute frequency and percentage of "message content" and "type of behaviour" items, and also their percentages by type of previous action (positive or negative). Pearson Chi-square comparisons and comparison of proportions between columns were performed to analyse differences among percentages.

RESULTS

The coach performed 756 verbal interventions during the game. As for the content, information relating to the execution of technical-tactical action was the most repeated throughout the game, with a frequency of 257 and a percentage of 34%, followed closely by interventions where content was not specified with 201 records and a percentage of 26.6% of all interventions, on the other hand, the content of the message less repeated throughout the game was the offensive type and accounted for 4 interventions involving the 0.5% of the total. In regard to type of behaviour, orderly instruction was the most used, with a frequency of 305 and a percentage of 40.3%, followed distantly by giving information, accumulating 141 interventions and a percentage of 18.7%. On the other side, stands the time-out request, with a frequency of 2, 0.3%, followed closely by aggression / insult, which added 3 interventions and a percentage of 0.4% , and the suggested instruction, which counted a total of 5 interventions throughout the match involving 0.7% of the total.

Table 1. Frequencies, percentages and significance of differences in message content.

	Total frequency	Total percentage	After + action	After - action	Difference
Execution of technical-tactical action	257	34	36.10%	31.30%	NS
Result of technical-tactical action	18	2.4	0.70%	4.60%	<0.05
Intensity	88	11.6	9.70%	13.70%	NS
Behaviour not specified	201	26.6	28.30%	24.60%	NS
Team organization	152	20.1	21.00%	19.10%	NS
Referee decision	36	4.8	4.00%	5.80%	NS
Offense or attempt to offend	4	0.5	0.20%	0.90%	NS
Total	756	100	100	100	

Table 2. Frequencies, percentages and significance of differences in type of behaviour.

	Total frequency	Total percentage	After + action	After - action	Difference
Positive feedback	48	6.3	9.20%	2.70%	<0.05
Negative feedback	49	6.5	2.60%	11.60%	<0.05
Orderly instruction	305	40.3	42.00%	38.00%	NS
Encouragement	63	8.3	11.30%	4.60%	<0.05
Disagreement	36	4.8	3.80%	6.10%	NS
Lament	22	2.9	1.90%	4.30%	NS
Information	141	18.7	19.10%	17.90%	NS
Query	16	2.1	1.20%	3.30%	<0.05
Call	28	3.7	2.60%	5.20%	NS
Celebration	12	1.6	2.10%	0.90%	NS
Suggested instruction	5	0.7	0.70%	0.60%	NS
Time-out request	2	0.3	0.00%	0.60%	NS
Aggression /insult	3	0.4	0.20%	0.60%	NS
Alert	26	3.4	3.30%	3.60%	NS
Total	756	100			

About differences according the previous action (positive or negative), Pearson Chi-square contrasts showed significant differences to message content (Chi-square=19.401, df=6, Sig=0.004) and type of behaviour (Chi-square =63.978, df=13, Sig<0.001). Comparison between columns showed that the provision of information about result of technical-tactical action was greater after negative action. As for the type of behaviour positive feedback and encouragement were greater after positive actions while after negative actions were greater negative feedback and query.

DISCUSSION AND CONCLUSIONS

In terms of content of the messages, results obtained were close to those reported in studies of a similar nature (Bloom et al., 1999; Trudel et al., 1996; Zetou et al., 2011), being instructions the more repeated behaviour in all cases (54.9% in Bloom et al., 1999; and 45.72% in Zetou et al., 2011) followed far behind by the praise and scolds, matched to the categories identified in this study as "positive feedback" and "negative feedback". Other items related to type of behaviour, as organization, showed similar results to those obtained in other works studying verbal behaviour of coaches in competitive situation (Trudel et al., 1996). It calls attention how frequently the coach did not specify the object of behaviour (201 interventions, which represent 26.6% of total), not being founded similar results in the studies reviewed. This kind of interventions is given, for example when coach performed encouragement and when they were contingent to a good or bad action, but without making reference to it.

Once discussed the general content of messages and type of behaviour we proceed to analyse the variation of these records based on the type of previous action, in which lies the primary objective of this work. About content of message only differences were obtained in messages referred to the result of a

technical-tactical action, these being more frequent after negative actions than positive. In this respect, Lawrence and Kingston (2008) stated that the information provided by the coach to his players can include information about the movement outcome (knowledge of results) and / or the movement pattern (knowledge of performance). They considered the information concerning the execution of actions (e.g. you have to look at the goalkeeper before shooting) more valuable than the referred to the result of actions (for example, we have to score more goals). Meanwhile knowledge of execution help to improve the players' performance in subsequent interventions, information about the outcome of actions is much more obvious and provides nonspecific and unhelpful contents to the player. In this vein, Schmidt (1988) noted that the importance of feedback is not in the reward or punishment of responses, but in providing information about actions from a previous trial, and by suggestion of how to change subsequent trials. In turn, More and Franks (2004) added that regardless of the quality of the performance, feedback should be enhanced by including informational content, whereas general and non-specific comments should be limited.

With regard the type of behaviour, it seems logical to bring more positive feedback after positive actions following negative actions, and to appreciate the same trend in the negative feedback after negative actions. In this sense, More and Franks (2004) noted that the information provided by the coach should reinforce the specific aspects of performance that are correct, and identify discrepancies between actual and desired response, so that incorrect aspects of performance can be modified. However, two aspects are most striking when analyzing the influence of the type of previous action in the kind of behaviour observed, the prevalence of moods following positive actions and of consultations after negative actions. The first aspect considered relevant (moods following positive actions), because while it makes sense to encourage a player after a positive action, there is less guess what the players need further information to encourage them after an action successfully executed. The second prominent position would be provided by increasing doubt and insecurity that generates negative actions on the coach, which would be consistent with the contribution of as much information regarding the results of the action following negative actions. This could be due to reduced effectiveness in the mechanisms of information processing and decision making in compromised situations (in this case the negative actions).

Concluding, the results of the study offer some clues about specific coach behaviours that may be game action dependent and give information about the quality of the coach communication skills. This knowledge may be useful to implement interventions to improve coaches' behaviour. However, more in depth studies with bigger samples are necessary to get a better and reliable comprehension of this question.

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